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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of
Okino NAOKI, et al.

Docket No: Q58562

Appln. No.: 09/509,493

Group Art Unit: 1733

Confirmation No.: 2695

Examiner: T. Kilkenny

Filed: April 26, 2000

For: METHOD FOR FORMING A RESINOUS FRAME AND METHOD FOR PREPARING A PANEL WITH A RESINOUS FRAME USING THE SAME

SUBMISSION OF APPELLANTS' BRIEF ON APPEAL

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an original and two copies of Appellants' Brief on Appeal. A check for the statutory fee of $320.00 is attached. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,

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WASHINGTON OFFICE

23373

PATENT TRADEMARK OFFICE

Date: June 18, 2003

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

#23/WDE
6/24/03
1 of 3

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APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. § 1.192

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 1.192, Appellants submit the following:

I REAL PARTY IN INTEREST

The real party in interest is Assignee, Asahi Glass Co., Ltd., of Japan

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants, the Appellants' legal representative, or Assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 10-23 are pending, are rejected, and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

On February 19, 2003, Appellants filed a Response under 37 C.F.R. § 1.116. But the February 19 response made no amendments to the claims. Therefore, the claims stand as presented before the final Office Action as mailed on November 19, 2002.

V. SUMMARY OF THE INVENTION

Embodiments of the present invention relate to a method for forming a resinous frame. In particular, embodiments of the invention relate to a method for preparing a panel with a resinous frame, wherein a side and a corner of a glass sheet to have the resinous frame unified thereto.[1]

Conventionally, a screw extruder was used in a method for forming a resinous frame on a glass sheet. However, problems of using a conventional screw extruder stem from the required change in moving speed of a glass sheet, when a resinous bead is applied at the corners. At the corners, the sheet moves more slowly with respect to the apparatus applying the resinous bead. Accordingly, the amount of resinous material to be applied in the corners must be reduced, per unit time, because the sheet moves more slowly at the corners.[2] In the past, attempts were made to solve the problem by changing the rotational speed of the metering screw.[3] However, the problem with such a strategy is that the rotational speed of the metering screw cannot be changed instantaneously and, therefore, the output from the extruder only gradually changes. And the change is not quick enough to keep the bead uniform at the corners.[4] In order to solve this

[1] Specification at page 1, lines 6-14.

[2] Specification at paragraph bridging pages 2 and 3, and page 4 line 4 - page 5, line 7.

[3] Specification at page 5, lines 8-26.

[4] Specification at page 5, line 27 - page 6, line 18.

problem, it is Appellants who have discovered that by using a plunger in connection with the metering screw, a uniform resinous bead can be applied to a sheet of glass even at corners.[5]

More particularly, with reference to Figs. 1-3 and 11, Appellants disclose one embodiment of the invention as being a method for preparing a panel 51 with a resinous frame 55' unified to a peripheral edge thereof, comprising:

extruding a resinous material 5, 55 from a die 6, 56 with a nozzle 7 having a certain cross-sectional shape so that said resinous material 5, 55 is formed with a certain cross-sectional shape substantially conforming to the cross-sectional shape of the nozzle 7;

drawing the extruded and formed resinous material 55 into a pressing member 59;

relatively moving a panel 51 and the pressing member 59 so that the pressing member 59 moves along a peripheral edge of the panel;

unifying, during the relatively moving, the extruded and formed resinous material 5, 55 to the peripheral edge with the pressing member 59;

supplying a resinous material 5 through a resinous material hopper 11 of an injection machine 14 provided on an upstream side of the die 6;

feeding, with a metering screw 9, a certain amount of the supplied resinous material 5 into a plunger chamber 16 of the injection machine 14;

controlling an injection amount of the resinous material in response to a relative moving speed between a peripheral edge of the panel and the die (see, for example, Fig. 3); and

injecting with a plunger 17, during said controlling, the fed resinous material 5 toward the die 6 so as to be extruded onto the peripheral edge of the panel 51 through the nozzle 7 of the die 6.

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[5] Specification at page 12, line 6 - page 15, line 18.

VI. ISSUES

Issue 1 Whether claims 10-23 are unpatentable under § 103(a) over EP 0 748 683 to Takahashi et al. (hereinafter Takahashi) in view of JP 59-85729 to Ichikawa (hereinafter Ichikawa) or DE 3 843 342 to Biffar (hereinafter Biffar) and further in view of US Patent 5,807,588 to Todaka et al. (hereinafter Todaka), in light of the lack of motivation to combine these references.

VII. GROUPING OF CLAIMS

Issue 1 With respect to issue 1, claims 10-23 stand or fall together.

VIII. ARGUMENTS

Issue 1 The Examiner rejected claims 10-23 under §103(a) as being unpatentable over EP 0 748 683 to Takahashi et al. (hereinafter Takahashi) in view of JP 59-85729 to Ichikawa (hereinafter Ichikawa) or DE 3 843 342 to Biffar (hereinafter Biffar) and further in view of US Patent 5,807,588 to Todaka et al. (hereinafter Todaka). Appellants respectfully traverse this rejection because there is no permissible motivation to combine the references as suggested by the Examiner.

First, there is no motivation to combine Ishikawa's plunger with the other cited references in the manner suggested by the Examiner. The Examiner asserts that the motivation for combining Ishikawa with Takahashi is that such would "enable the back pressure of the metering screw to be more freely adjustable as compared to conventional screw extruders".[6] But Ishikawa states that adjustment of the back pressure of the metering screw is accomplished by "making the screw to be movable in the axial direction".[7] That is, Ishikawa axially moves the screw between the positions shown in Figs. 3 and 4 in order to adjust the back pressure. Therefore, one of ordinary skill in the art following the teachings of Ishikawa would have been

[6] Final Office Action mailed on November 19, 2002, at page 5, last three lines and page 6, lines 1-2.

[7] Ishikawa at English Abstract, lines 1 and 2.

motivated to make the screw of Takahashi axially movable; he would not have been motivated to use a plunger, as suggested by the Examiner. Indeed, Ishikawa discloses that the reason for using a plunger is to sufficiently knead a resin "without causing resin leakage or the inflow of the resin into a mold".[8] Therefore, because Takahashi does not require a mold, one of ordinary skill in the art would not have been motivated to incorporate Ishikawa's plunger therein.

Second, there is no motivation for combining Biffar with the other cited references in the manner suggested by the Examiner. The Examiner asserts that the motivation for combining Biffar with Takahashi is that such would "provide extrusion means that provide a simple way to discharge plastic without major temperature loss".[9] But Biffar teaches that such an advantage is provided by discharging plastic directly into a mold 7 from a heated feed line 3.[10] Therefore, one of ordinary skill in the art following the teachings of Biffar would provide Takahashi with a heated feed line from the screw to the discharge nozzle; he would not have been motivated to provide Takahashi with a plunger, as suggested by the Examiner.

Third, the Examiner impermissibly uses the Appellants' own teachings against him. With respect to the above two arguments, the Examiner's asserted advantages do not provide motivation for combining the references as he suggests. The Examiner asserts that his stated motivations were only examples of the more general advantage that metering devices comprising screw extruders in combination with plungers provide more accurate metering of plastic resins as compared to conventional screw extruders.[11] In the statement of the rejection itself, the

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[8] English translation of Ishikawa at page 2, lines 4-6, and page 3, lines 16-20. Note, an English translation of Ishikawa was provided to the PTO with the Amendment filed on March 11, 2002.

[9] November 19 Office Action at page 6, lines 2-3.

[10] See the English translation of Biffar at: page 1, 4th to 6th paragraphs; page 3, 1st full paragraph; and page 3, last 3 lines. Note, an English translation of Biffar was provided to the PTO in an Amendment filed on March 11, 2002.

[11] November 19 Office Action at page 6, lines 4-6.

Examiner repeats this bald assertion.[12] However, the point Appellants emphasize is that what makes Ichikawa able to "enable the back pressure of the metering screw to be more freely adjustable" is that the screw itself moves back and forth; such advantage is not tied to the fact that Ichikawa uses a plunger. Similarly, Appellants emphasize that what makes Biffar able to "provide extrusion means that provide a simple way to discharge plastic without major temperature loss" is that he includes a heated feed line 3; not because he uses a plunger with the metering screw. Accordingly, the Examiner's asserted advantages are in no manner connected with the provision of a plunger in connection with the screw extruder. Therefore, how can these asserted motivations be examples of the advantages of providing a plunger with a screw extruder? Instead, the Examiner takes this motivation from Appellants' specification.

It is Appellants who disclose the drawbacks of using a screw extruder in connection with a method for forming a resinous frame. And it is Appellants who disclose the solution to that problem. That is, Appellants disclose the problems of using a conventional screw extruder stem from the required change in moving speed of a glass sheet, when a resinous bead is applied at the corners. At the corners, the sheet moves more slowly with respect to the apparatus applying the resinous bead. Accordingly, the amount of resinous material to be applied in the corners must be reduced.[13] In the past, attempts were made to solve the problem by changing the rotational speed of the metering screw.[14] However, the problem with such a strategy is that the rotational speed of the metering screw cannot be changed instantaneously and, therefore, the output from the extruder only gradually changes. And the change is not quick enough to keep the bead uniform at the corners.[15] In order to solve this problem, it is Appellants who have discovered that by

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[12] November 19 Office Action at page 3, lines 8-13.

[13] Specification at paragraph bridging pages 2 and 3, and page 4 line 4 - page 5, line 7.

[14] Specification at page 5, lines 8-26.

[15] Specification at page 5, line 27 - page 6, line 18.

using a plunger in connection with the metering screw, a uniform resinous bead can be applied to a sheet of glass even at corners.[16]

Thus, the Examiner's asserted motivation of the increased accuracy of metering screws with plungers appears to have been taken directly from Appellants' specification. This the Examiner cannot do. Accordingly, Appellants respectfully request that if the Examiner persists in maintaining this rejection, he also come forward with evidence in the prior art teaching the advantages of using a plunger with a metering screw when forming a resinous bead on a sheet of glass.

Fourth, the Examiner impermissibly picks and chooses elements from the prior art, by using the claims as a guide, to reconstruct the Appellants' invention. But it is not obvious to do so.[17] That is, the Examiner asserts "it would have been obvious to one of ordinary skill in the art to employ an extruder having a metering screw and plunger for the extruder as disclosed by Takahashi because extruding apparatuses having a metering screw and plunger are known as evidenced by Ichikawa and Biffar."[18] However, Appellants do not claim to have invented a machine or method for applying a resinous bead to a sheet of glass. Similarly, Appellants do not claim to have invented a metering screw with a plunger. Instead, Appellants have claimed to discover the advantage of using the two elements in combination.

But most if not all inventions arise from a combination of old elements.[19] Thus, every element of a claimed invention may often be found in the prior art.[20] However, identification in

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[16] Specification at page 12, line 6 - page 15, line 18.

[17] *Ex Parte Clapp*, 227 USPQ 972 (Bd. Pat. App. & Interf. 1985). See also: *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ.2d 1780, 1784 (Fed. Cir. 1992)(citing *In re Gorman*, 933 F.2d 982, 987, 18 USPQ.2d 1885, 1888 (Fed. Cir. 1991) ("It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious.")).

[18] November 19 Office Action at page 3, lines 4-8.

[19] *In re Kotzab*, 55 USPQ2d at 1316 (*citing In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998).

the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *Id.* Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant.[21]

"Although the suggestion to combine references may flow from the nature of the problem, 'defining the problem in terms of its solution reveals improper hindsight in the selection of the prior art relevant to obviousness.'"[22] Therefore, "when determining the patentability of a claimed invention which combines two known elements, the question is whether there is something in the prior art as a whole to suggest the desirability, and thus obviousness, of making the combination."[23] Here, as discussed above, there is not. Instead, Takashi discloses a method for preparing a panel with a resinous frame, and Ishikawa separately teaches the use of a metering screw wherein the screw is able to move in the axial direction (and also happens to include a plunger). Additionally, Biffar separately discloses the use of a heated feed line with a metering screw (and also happens to include a plunger).

For at least any one of the above reasons, this rejection is believed to be in error, and should be reversed.

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[20] *Id.*

[21] *In re Kotzab*, 55 USPQ2d at 1316 (*citing In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); and *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)).

[22] *Ecolochem, Inc. v. Southern California Edison Co.*, 56 USPQ2d 1065 (Fed. Cir. 2000) (*citing Monarch Knitting Mach. Corp. v. Sulzer Morat Gmbh*, 139 F.3d 877, 880, 45 USPQ2d 1977, 1981 (Fed. Cir. 1998).

[23] *Id.* at 1073 (*citing In re Beattie*, 974 F.2d 1309, 1311-12, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992).

Conclusion

The present Brief on Appeal is being filed in triplicate. Unless a check is submitted herewith for the fee required under 37 C.F.R. §1.192(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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Date: June 18, 2003

APPENDIX

Claims 10-23 on Appeal:

10. A method for forming a resinous frame comprising:

extruding, not into a mold, a resinous material from a die with a nozzle having a certain cross-sectional shape so that said resinous material is formed with a certain cross-sectional shape substantially conforming to the cross-sectional shape of the nozzle; and

injecting, with an injection machine having a plunger that is provided upstream of the die, the resinous material toward the die so that the resinous material is extruded through the die.

11. A method for forming a resinous frame comprising:

extruding a resinous material from a die with a nozzle having a certain cross-sectional shape so that said resinous material is formed with, and retains, a certain cross-sectional shape of the nozzle;

supplying a resinous material through a resinous material hopper of an injection machine provided on an upstream side of the die;

feeding, with a metering screw, a certain amount of the supplied resinous material into a plunger chamber of the injection machine; and

injecting, with the plunger at a certain pressure, the fed resinous material toward the die so as to extrude the resinous material through the nozzle of the die.

12. The method for forming a resinous material according to Claim 10, characterized in that a resinous material flow controller is provided between the injection machine and the nozzle, and the resinous material flow controller is employed to control an injection amount of the resinous material per unit time.

13. The method for forming a resinous material according to Claim 11, characterized in that a resinous material flow controller is provided between the injection machine and the nozzle,

and the resinous material flow controller is employed to control an injection amount of the resinous material per unit time.

14. A method for preparing a panel with a resinous frame, comprising:

relatively moving a die for extruding a resinous material and a peripheral edge of a panel;

extruding, during said step of relatively moving, a resinous material through a nozzle provided in the die, wherein said nozzle has a certain cross-sectional shape;

forming the extruded resinous material on the peripheral edge of the panel so as to have a certain cross-sectional shape substantially conforming to the cross-sectional shape of the nozzle;

supplying a resinous material through a resinous material hopper of an injection machine provided on an upstream side of the die;

feeding, with a metering screw, a certain amount of the supplied resinous material into a plunger chamber of the injection machine;

controlling an injection amount of the resinous material in response to a relative moving speed between a peripheral edge of the panel and the die; and

injecting with a plunger, during said controlling, the fed resinous material toward the die so as to be extruded onto the peripheral edge of the panel through the nozzle of the die.

15. The method for preparing a panel with a resinous frame according to Claim 14, characterized in that a resinous material flow controller is provided between the injection machine and the nozzle, and the resinous material flow controller is employed to restrain an excess discharge in response to the relative moving speed between the panel and the die.

16. The method for preparing a panel with a resinous frame according to Claim 14, characterized in that when a portion of the panel facing the die transfers from a side of the panel onto a corner of the panel, the relative moving speed between the panel and the die is reduced, a moving speed of the plunger is reduced in response to the reduction in the relative moving speed to decrease an output amount from the nozzle per unit time, and that when the portion of the panel facing the die transfers from the corner of the panel onto another side of the panel, the relative moving speed between the panel and the die is raised, the moving speed of the plunger is raised in response to the raise in the relative moving speed to increase the output amount from the nozzle per unit time.

17. The method for preparing a panel with a resinous frame according to Claim 15, characterized in that when a portion of the panel facing the die transfers from a side of the panel onto a corner of the panel, the relative moving speed between the panel and the die is reduced, a moving speed of the plunger is reduced in response to the reduction in the relative moving speed to decrease an output amount from the nozzle per unit time, and that when the portion of the panel facing the die transfers from the corner of the panel onto another side of the panel, the relative moving speed between the panel and the die is raised, the moving speed of the plunger is raised in response to the raise in the relative moving speed to increase the output amount from the nozzle per unit time.

18. A method for preparing a panel with a resinous frame unified to a peripheral edge thereof, comprising:

extruding a resinous material from a die with a nozzle having a certain cross-sectional shape so that said resinous material is formed with a certain cross-sectional shape substantially conforming to the cross-sectional shape of the nozzle;

drawing the extruded and formed resinous material into a pressing member;

relatively moving a panel and the pressing member so that the pressing member moves along a peripheral edge of the panel;

unifying, during the relatively moving, the extruded and formed resinous material to the peripheral edge with the pressing member;

supplying a resinous material through a resinous material hopper of an injection machine provided on an upstream side of the die

feeding, with a metering screw, a certain amount of the supplied resinous material into a plunger chamber of the injection machine;

controlling an injection amount of the resinous material in response to a relative moving speed between a peripheral edge of the panel and the die; and

injecting with a plunger, during said controlling, the fed resinous material toward the die so as to be extruded onto the peripheral edge of the panel through the nozzle of the die.

19. The method for preparing a panel with a resinous frame according to Claim 18, characterized in that a resinous material flow controller is provided between the injection machine and the nozzle, and the resinous material flow controller is employed to restrain an excess discharge in response to the relative moving speed between the panel and the pressing member.

20. The method for preparing a panel with a resinous frame according to Claim 18, characterized in that when a portion of the panel facing the pressing member transfers from a side of the panel onto a corner of the panel, the relative moving speed between the panel and the pressing member is reduced, a moving speed of the plunger is reduced in response to the reduction in the relative moving speed to decrease an output amount from the nozzle per unit time, and that when the portion of the panel facing the pressing member transfers from the corner of the panel onto another side of the panel, the relative moving speed between the panel and the pressing member is raised, the moving speed of the plunger is raised in response to the raise in the relative moving speed to increase the output amount from the nozzle per unit time.

21. The method for preparing a panel with a resinous frame according to Claim 19, characterized in that when a portion of the panel facing the pressing member transfers from a side of the panel onto a corner of the panel, the relative moving speed between the panel and the pressing member is reduced, a moving speed of the plunger is reduced in response to the reduction in the relative moving speed to decrease an output amount from the nozzle per unit time, and that when the portion of the panel facing the pressing member transfers from the corner of the panel onto another side of the panel, the relative moving speed between the panel and the pressing member is raised, the moving speed of the plunger is raised in response to the raise in the relative moving speed to increase the output amount from the nozzle per unit time.

22. (New) The method for forming a resinous frame according to claim 10, further comprising extruding said resinous material onto a panel.

23. (New) The method for forming a resinous frame according to claim 11, further comprising extruding said resinous material onto a panel.